Tetrahedron Vol. 44, No. 3, p. xi, 1988.
Pergamon Journals Ltd. Printed in Great Britain.

PREFACE

During the past few decades a revolution has occurred in our understanding of the chemistry, physics and biology of peptides. This revolution has been made possible by the simultaneous rapid development of several areas including: 1) efficient, rapid, and highly reproducible methods of peptide synthesis, a) on a solid support (Merrifield method), and b) in solution with purification of intermediates (particularly for large-scale industrial application); 2) new highly effective separation methods especially reversed phase high pressure liquid chromatography; 3) development of highly sensitive methods of peptide analysis especially fast atom bombardment mass spectrometry and micro-sequencing; 4) important advances in the methods available for peptide conformational studies, especially 2 dimensional nuclear magnetic resonance spectroscopy and other spectroscopic tools, and molecular mechanics and molecular dynamics calculations; 5) extraordinary developments in biology which have provided much more sensitive and specific assays for examining the bioactivities of peptide hormones and neurotransmitters both *in vitro* and *in vivo*; 6) development of molecular pharmacology, molecular endocrinology, and molecular biology including insights into posttranslational and posttranscriptional processing of precursor proteins to peptides; and 7) rapid advances in computer assisted modeling which have provided new abilities to examine peptide conformation in the context of drug design for specific peptide–protein interactions such as enzyme–peptide substrate, receptor–peptide hormone or neurotransmitter, and antibody–peptide antigen interactions.

These advances provide important new opportunities for organic chemists in amino acid and peptide synthesis, in the design of peptides with specific chemical, physical and biology properties, in uncovering the chemical basis for peptide structure and function, in the development of peptide drugs and organic mimetics of peptide drugs, etc. In this Symposium in Print we have brought together some of the outstanding chemical scientists throughout the world who are participating in developing these new opportunities. In this volume they present some aspect of their research which provides insight into recent developments in this area. We hope these studies will provide stimulation for chemists not yet participating in this area to make contributions to it.

Participants from over 10 countries are represented. Though many other outstanding scientists are involved in the rapid advances being made in this field, we hope the examples given will provide insight into how synthetic, structural, and mechanistic organic chemistry can be used in conjunction with powerful new structural and biological tools for the study of peptide structure and function. We hope this Symposium in Print will be helpful to you in developing insight into current chemical studies in this area. We also hope you will contact the authors with your comments and questions.

VICTOR J. HRUBY
Department of Chemistry
University of Arizona
Tucson, Arizona 85721
U.S.A.

ROBERT SCHWYZER
Laboratory of Molecular Biology and Biophysics
Swiss Federal Institute of Technology (ETH)
CH-8093 Zürich
Switzerland